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EXAMINER

BRIER, JEFFERY A

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/933,017  
Filing Date: August 21, 2001  
Appellant(s): MURATA, TORU

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Bhaskar Kakarla  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 5/23/2006 appealing from the Office action mailed 9/20/2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,782,548	Miyashita	7-1998
6,437,786	Yasukawa	8-2002

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita, U.S. Patent No. 5,782,548, in view of Yasukawa, U.S. Patent No. 6,437,786.

Claims 1-12:

Miyashita, U.S. Patent No. 5,782,548, teaches a projector and associated remote control connected via a network to a PC.

Yasukawa, U.S. Patent No. 6,437,786, teaches a LAN connected projector which allows a user via keying input device 11 to enter commands into the projector such as next image. If the next image is not in the projector then the projector sends a command to the server to supply the next image to the projector, see column 11 lines 3-67 and column 12 lines 28-34 and line 44 to column 13 lines 10 and 30-50.

Miyashita does not explicitly teach the projector and the PC are connected by an Ethernet network and does not explicitly describe transmitting the image data via the Ethernet lines.

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Yasukawa teaches a projector and PC connected by an Ethernet network and teaches transmitting image data on the Ethernet lines.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Miyashita's projector and PC for use in an Ethernet network because an Ethernet network is faster than an RS-232, see the speed limitation of this standard at <http://www.sangoma.com/signal.htm>

This Sangoma reference article teaches that RS-232 is slower than Ethernet. It teaches to overcome the speed limitations RS-232 is replaced by RS-422 and other balanced interfaces such as Ethernet. A portion of this reference is reproduce below with emphasis added.

**The standards for RS-232 and similar interfaces usually restrict RS-232 to 20kbps or less and line lengths of 15m (50 ft) or less. These restrictions are mostly throwbacks to the days when 20kbps was considered a very high line speed, and cables were thick, with high capacitance. (emphasis added)**

However, in practice, RS-232 is far more robust than the traditional specified limits of 20kbps over a 15m line would imply. Most 56kbps DSUs are supplied with both V.35 and RS-232 ports because RS-232 is perfectly adequate at speeds up to 200kbps. You may remember the "zero slot LANs" that were popular a few years ago, using RS-232 ports on PCs running at 115kbps. At Sangoma we have successfully used RS-232 (albeit on short cables) at line speeds of over 1.6Mbps.

Interestingly enough, most RS-232 ports on mainframes and midrange computers are capable of far higher speeds than their rated 19.2kbps. Usually these "low speed" ports will run error-free at 56kbps and above.

The 15m limitation for cable length can be stretched to about 30m for ordinary cable, if well screened and grounded, and about 100m if the cable is low capacitance as well. Our standard test cable at Sangoma is an interconnected run of round and flat cable, about 25M in length, with no screening at all. We run error-free on this cabling collection at up to 112kbps.

#### **S-422, RS-485, V.11 and other balanced interfaces.**

The limitations of RS-232 are largely eliminated by the balanced line interface.

A pair of wires is used to carry each signal. The data is encoded and decoded as a

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differential voltage between the two lines. A typical truth table for a balanced interface is as follows:

**$VA-VB < -0.2v = 0$**

**$VA-VB > +0.2v = 1$**

As a differential voltage, in principle the interface is unaffected by differences in ground voltage between sender and receiver.

Furthermore, if lines A and B are close together, they will be affected almost identically by external electromagnetic noise. If the lines are also twisted together, then neither line is permanently closer to a noise source than the other. Hence the well known "twisted pair" is extremely effective in eliminating noise from the signal.

**Balanced systems are used by LAN topologies like Ethernet and Token Ring. They can support line speeds over 100Mbps and work reliably at distances of several kilometers.(emphasis added)**

Therefore to ensure the delivery of images from the PC to the projector during the presentation with less delay of the delivery of the images which will cause less perceptible delay by the audience when the presenter changes the displayed image. One of ordinary skill in the art would select Ethernet over RS-232 to ensure a good presentation occurs.

RS-232C transmits communication control data as taught in the Sangoma reference article which states:

Pins 4 and 5 carry the **RTS** and **CTS** signals. In most situations, RTS and CTS are constantly on throughout the communication session. However where the DTE is connected to a multipoint line, RTS is used to turn carrier on the modem on and off. On a multipoint line, it is imperative that only one station is transmitting at a time. When a station wants to transmit, it raises RTS. The modem turns on carrier, typically waits a few milliseconds for carrier to stabilize, and raises CTS. The DTE transmits when it sees CTS up. When the station has finished its transmission, it drops RTS and the modem drops CTS and carrier together. This is explained further in our tutorial on the SDLC protocol, which uses multipoint lines extensively.

It also would have been obvious to one of ordinary skill in the art in view of Yasukawa to transmit the image data on the Ethernet lines since this would reduce the

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need for additional cables to carry the video signals. This modification would save natural resources, save installation time of a new network, allow the use of an existing Ethernet network, and save money.

A detailed analysis of claims 1-14 follows.

Claim 1:

Miyashita and Yasukawa teach an electronic presentation system (*Miyashita: see figure*

*4. Yasukawa: figures 3 and 4*) comprising:

Ethernet communication means (*Miyashita: serial transmission line 50 is a RS-232C network communication line which is a network communication means equivalent to that described by applicants specification because RS-232C allows multiple devices to communicate with any other device or devices connected to the network. Yasukawa: Network 33 and 40. At column 10 line 25 to column 11 line 19 various networks are described. Column 10 lines 25-30 teaches using Ethernet since 10 base 5, 10 base 2, and 10 base T cables are Ethernet cables.*);

a first image and voice display means (*Miyashita: projector 10. Yasukawa: projector 31.*) connected to said Ethernet communication means in which display control (*cursor position control, page advance, page return, etc, column 10 line 65 to column 11 line 15*) and communication control (*The remote control controls the communication of the cursor position control, page advance, page return, etc. Additionally as taught by the Sangoma reference article RS-232C provides communication control data and data on the RS-232C network.*) through said Ethernet communication means are controlled

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by remote control means (*Miyashita: column 9 lines 9-34, remote controller 20 controls the computer's presentation by transmitting signals to the projector 10 which transfers those signals to the computer via serial transmission line 50. This causes display control (cursor position control, page advance, page return, etc, column 10 line 65 to column 11 line 15 ) and communication control (RS-232C provides communication control data as taught by the Sangoma reference article.) to be sent from the projector to the computer. Yasukawa: keying input device 11.); and*

*a personal computer (Miyashita: PC 40. Yasukawa: PCs 32A, 32B, 41A, 41B) provided with a second image (Miyashita: display 44. Yasukawa: see figures 3 and 4, PCs 32A, 32B, 41A, 41B have their own display means) and voice (Miyashita: inherently Miyashita includes voice display means since the computer is displaying a presentation having both visual and audio. Yasukawa: since the computer is displaying a presentation having both visual and audio then the PCs have both image and voice display means.) display means connected to said Ethernet communication means (Miyashita: indirectly display 44 is connected to serial transmission line 50. Yasukawa: the PC's displays are connected to network bus 33 and 40 via the PC's network means.) and different from said first image and voice display means placed in a position different from the position placing said first image and voice display means (Miyashita: the location of the computer's display means is different than the location of the projector's display means since the projector and computer are physically separate devices, also note column 1 lines 41-54. Yasukawa: network 33 and 40 is discussed as either local intranet or the internet.), and input means (Miyashita: keyboard 46 and*



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*mouse 48. Yasukawa: this claim does not state what the input means is, thus, any input means of the PCs meets the broad claim limitation such as the network communication means.);*

wherein said remote control means captures display contents displayed by said personal computer on said second image and voice display means to display said captured display contents on said first image and voice display means at the same time (*Miyashita: at column 10 line 51 to line 18 many mouse commands may be programmed into the remote controller that will perform the function performed by the user using the mouse at the PC described at column 1 lines 10-38. This selection process causes the personal computer to capture displayed image on the personal computer and display it on the projector. At column 11 lines 4-19 page return and page advance buttons on the remote control are described. When the operator presses page return or page advance the system will return or advance the page displayed by the personal computer, capture the page, and transmit the page to the projector, see column 12 lines 28-36.), and*

wherein said Ethernet communication means is used to transfer said display contents, said display control and said communication control (*Miyashita does not explicitly teach the projector and the PC are connected by an Ethernet network and does not explicitly describe transmitting the image data via the Ethernet lines.*

*Yasukawa teaches a projector and PC connected by an Ethernet network and teaches transmitting image data on the Ethernet lines.).*

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Miyashita's projector and PC for use in an Ethernet network because an Ethernet network is faster than an RS-232, see the above discussion of RS-232 and Ethernet. This will ensure the delivery of images from the PC to the projector during the presentation with less delay of the delivery of the images which will cause less perceptible delay by the audience when the presenter changes the displayed image. One of ordinary skill in the art would select Ethernet over RS-232 to ensure a good presentation occurs.

It also would have been obvious to one of ordinary skill in the art in view of Yasukawa to transmit the image data on the Ethernet lines since this would reduce the need for additional cables to carry the video signals. This modification would save natural resources, save installation time of a new network, allow the use of an existing Ethernet network, and save money.

Claim 2:

Miyashita teaches the electronic presentation system according to claim 1, wherein said remote control means comprises a remote control transmitter (*see figure 5, infrared light emitting means 36 transmits signals*) sending a sending signal of a code corresponding to a depressed button (*column 9 lines 22-31*) and means for converting said sending signal of said remote control transmitter to a communication signal of said Ethernet communication means (*signal processor 60, computation control means 62 and I/O*

*interface 66 converts the infrared signal into a signal compatible with serial transmission line 50) and sending the communication signal (via interface 66);*

wherein said personal computer comprises means for converting said sending signal of said remote control transmitter sent through said communication means to a signal (*I/O interface 72*) equivalent to an output signal of the input means (*I/O interface 74 generates signals from input means 46 and 48 equivalent to the signals generated by I/O interface 72, see column 9 lines 66-67 and column 10 lines 1-5. Miyashita teaches at column 11 line 40 to column 12 line 35 converting the remote control codes at the computer into input device codes.*) provided in said personal computer, means for selecting previously created display contents to be displayed as said display contents on said second image and voice display means (*the user is enabled to select an image on the computer display 44 for display by projector 10 such as provided by the page advance button, column 11 line 5*), by said converted signal equivalent to the output signal of said input means (*column 10 lines 1-5*), and means for converting a display signal of said selected display contents displayed on said second image and voice display means to a communication signal of said Ethernet communication means at the same time and sending the communication signal (*I/O interface 72 transmits the display signal corresponding to the selected display contents to the projector*) using said Ethernet communication means (*Obvious for the reasons given in the above discussion of claim 1.*);

wherein said remote control means further comprises means (*such as the buttons described at column 11 lines 4-6*) for sending the display signal of said second

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image and voice display means sent through said Ethernet communication means to said first image and voice display means (*Obvious to send the display signal over the Ethernet communication means for the reasons given in the above discussion of claim 1.*).

Claim 3:

Miyashita teaches the electronic presentation system according to claim 2, wherein the selection of the previously created display contents displayed on said second image and voice display means, done by the signal equivalent to said converted output signal of said input means is executed by basic software (*bios is in all computers as well as operating system 100, column 9 lines 61-67*) installed in said personal computer (*personal computer 40*) and application software (*application software 120, column 9 lines 61-67*) operated under said basic software and used to previously create said display contents.

Claim 4:

Miyashita teaches the electronic presentation system according to claim 2, wherein said Ethernet communication means is a wired communication system (*Miyashita: the serial transmission line 50 is described as RS-232, column 8 lines 10-13, which is typically a wired communication system. Yasukawa: the term LAN includes both wired and wireless networks.*) .

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Claim 5:

Miyashita teaches the electronic presentation system according to claim 2, wherein said Ethernet communication means is a wireless communication system (*Miyashita: the serial transmission line 50 is described as RS-232, column 8 lines 10-13, which is typically a wired communication system, however, wireless RS-232 is known and used in wireless communications systems. Yasukawa: the term LAN includes both wired and wireless networks.*).

Claim 6:

The PC is remotely connected in both Miyashita and Yasukawa to the projector, thus, second image and voice display means is remotely connected to the first image and voice display means.

Claim 7:

This claim is a device claim version of means plus function claim 1 and is rejected for the reasons given for claim 1.

Claim 8:

This claim is a device claim version of means plus function claim 6 and is rejected for the reasons given for claim 6.

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Claim 9:

This claim is a device claim version of means plus function claim 2 and is rejected for the reasons given for claim 2.

Claim 10:

This claim is a device claim version of means plus function claim 3 and is rejected for the reasons given for claim 3.

Claim 11:

This claim is a device claim version of means plus function claim 4 and is rejected for the reasons given for claim 4.

Claim 12:

This claim is a device claim version of means plus function claim 5 and is rejected for the reasons given for claim 5.

## **(10) Response to Argument**

### **1. Rejections under 35 U.S.C. 103(a) over Miyashita in view of Yasukawa**

#### **A. Claims 1-12**

Appellants arguments filed on 5/23/2006 have been fully considered, however, they are not deemed to be persuasive. The claimed feature found in claim 1 "Ethernet

communication means” and “wherein said Ethernet communication means is used to transfer said display contents, said display control and said communication control” is not fully taught by Miyashita, however, this would have been obvious to one of ordinary skill in the art in view of Yasukawa.

Miyashita’s preferred embodiment sends the claimed “said display control and said communication control” over an RS-232 communication line while applicant uses an Ethernet communication line, note page 11 line 22 to page 12 line 1. Yasukawa sends the claimed “said display control and said communication control” over an Ethernet communication line. Miyashita’s preferred embodiment sends the claimed “display contents” over video lines rather than the claimed Ethernet communication line, see figure 6. Yasukawa sends the claimed “display contents” over the claimed Ethernet communication line. Yasukawa at column 1 line 19 to column 2 line 41 provides motivation for sending both the claimed “said display control and said communication control” and the “display contents” over an Ethernet line which provides motivation to modify Miyashita to use an Ethernet line to send both the claimed “said display control and said communication control” and the “display contents” over an Ethernet line.

In view of Yasukawa the two differences between the invention defined in appellants claim 1 and Miyashita’s preferred embodiment would have been obvious to one of ordinary skill in the art.

The arguments spanning page 10 to page 14 next to last paragraph generally discuss claim 1, the rejection, and Miyashita. These arguments discuss Miyashita as not having one communication path for the video signal and the control signal to the

projector. Nonetheless figures 4 and 5 of Miyashita do not show the video signal lines and since drawings may be used to as prior art teaching, see MPEP 2125, then Miyashita suggests to use one communication path for the video signal and the control signal to the projector. However, it should be noted that Miyashita does not need to suggest this to render the claims obvious since Yasukawa teaches using one communication path for providing the video signal and the control signal to the projector and provides the motivation to modify Miyashita.

The argument at page 14 last paragraph and page 15 first paragraph is not persuasive because the argued motivation is not the only motivation provided by the Examiner. See the Final Rejection which uses Yasukawa to provide motivation for sending the image data from the computer to the projector on an Ethernet communication line, see page 8 in the paragraph before the detailed analysis of claim 1 of the Final Rejection and page 12 first paragraph of the Final Rejection.

The argument in the paragraph spanning pages 15 and 16 is not persuasive because a faster communication line, such as Ethernet, for the claimed "said display control and said communication control" is desirable since it will provide for quicker page advance and reverse than an RS-232 communication line by allowing the page advance and reverse data to travel more quickly from projector 10 to computer 40.

The argument in the first full paragraph and the last full paragraph on page 16 is not persuasive because if this argument were true then applicants transmission of the currently displayed display contents over Ethernet would be slower than a video interface which slowness may induce a poor video presentation. Thus, using a fast



connection, such as Ethernet, along with digital display content data is needed to provide sufficient bandwidth for the video display content to be transmitted to the projector which is taught by Yasukawa.

The argument presented in the paragraph spanning pages 16 and 17 and in the first full paragraph on page 17 is not persuasive because Miyashita teaches how to capture the currently displayed image on the computer and send it to the projector via the video lines. This teaches one of ordinary skill in the art how to capture the currently displayed image and Yasukawa provides motivation to transmit the captured currently displayed image on the Ethernet line. One of ordinary skill in the art in view of Yasukawa and the digital nature of Ethernet would know how to transmit the captured currently displayed image digitally over the Ethernet line. This level of skill by one of ordinary skill in the art at the time of applicants invention is also suggested by appellant's own specification which does not explicitly discuss how image capture part 27 captures the image displayed on the display part (display) 13 from the image development part 26, and converts the image to image data which is then sent to a packet generation part 28. See appellants specification at page 7 lines 2-5. Therefore one of ordinary skill in the art has the skill to "transfer the currently displayed image of Miyashita over an Ethernet line". Thus, the teachings of Yasukawa and Miyashita do disclose or suggest the claimed Ethernet communication means that is used to transfer the claimed display contents as set forth in claim 1.

The arguments concerning claim 7 and its dependent claims 8-12 on page 17 last two paragraphs are not persuasive for the reasons given above for claim 1. Additionally since claim 7 at line 11 claims "to be displayed" rather than "currently displayed" claimed in claim 1 then the arguments presented by appellant in the paragraph spanning pages 16 and 17 and in the first full paragraph on page 17 are not applicable to claims 7-12 because display contents to be displayed is different than currently displayed image display content.


The reference to dependent claims 2-6 is noted and their rejection is maintained in view of the arguments given above for parent claim 1.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

  
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Division 2628

Conferees:

Michael Razavi

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